Abstrak

PENGARUH PEMBERIAN JUS KOMBINASI SEMANGKA KUNING – PISANG RAJA TERHADAP KADAR ASAM LAKTAT PASCA AKTIVITAS ANAEROBIK

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Latar Belakang: Proses metabolisme anaerobik menghasilkan sisa metabolisme berupa asam laktat. Pisang raja mengandung kalium dan semangka kuning mengandung sitrulin yang dapat menekan produksi asam laktat. Penelitian ini bertujuan untuk melihat dan membandingkan pengaruh pemberian jus kombinasi buah semangka kuning dengan pisang raja terhadap kadar asam laktat darah pasca aktivitas anaerobik.
Metodologi: Penelitian eksperimental ini menggunakan rancangan *post-test only with controlled group design.* Uji kadar asam laktat darah dilakukan dengan metode kolorimetri menggunakan alat spektofotometer. Penelitian ini menggunakan 30 ekor tikus *Sprague Dawley* jantan berusia 8 minggu yang dibagi menjadi 5 kelompok, yaitu kelompok kontrol positif (tidak diberi jus dan tidak diolahragakan anaerobik), kelompok kontrol negatif (tidak diberi jus dan diolahragakan anaerobik), dan tiga kelompok perlakuan dosis jus 1,8 g, 3,6 g, dan 1,8 g + gula 0,27 g/200 g BB dan diolahragakan anaerobik. Jus diberikan 30 menit sebelum dilakukan olahraga anerobik yaitu renang selama 3 menit lalu dilanjutkan dengan pengambilan darah. Data kadar asam laktat diuji dengan uji *shapiro wilk* dan perbedaan kadar asam laktat tiap kelompok dianalisis menggunakan *one way* ANOVA dilanjutkan uji LSD.
Hasil Penelitian: Rata-rata kadar asam laktat pada kelompok kontrol positif, kelompok kontrol negatif, dan tiga kelompok perlakuan dosis jus 1,8 g, 3,6 g, dan 1,8 g + gula 0,27 g/200 g BB berturut-turut adalah 1,38 mMol/L, 7,14 mMol/L, 3,74 mMol/L, 1,66 mMol/L, dan 2,91 mMol/L.
Kesimpulan: Dosis jus pada kelompok perlakuan 2 (3,6 g/200 g BB) adalah dosis yang paling baik karena menghasilkan asam laktat terendah.

Kata Kunci: Anaerobik, Asam Laktat, Pisang Raja, Semangka Kuning, *Sport Drink*

Abstract

THE IMPACT ON GIVING COMBINATION OF YELLOW WATERMELON – RAJA'S BANANA JUICE WITH LACTATE ACID PRODUCTION AFTER ANAEROBIC EXERCISE

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Background: Anaerobic metabolic processes produce metabolic waste in the form of lactate acid. Raja's banana contains potassium and yellow watermelon contains citrulline which can suppress lactate acid production. This research was aimed to find out and compare the impact of the combination of yellow watermelon and raja's banana juice with lactate acid production after anaerobic exercise.
Method: This experimental research used post-test only with controlled group design. The examination of lactate acid production was done by colorimetry method using spectrophotometer. Thirty Sprague Dawley 8 weeks male mouse were divided into five groups; one positive control group (not given any juice and not done any anaerobic exercise), one negative control group (not given any juice but done the anaerobic exercise), and three groups with juice doses treatment respectively 1,8 g, 3,6 g, and 1,8 g + 0,27 g of sugar/200 g body weight and done the anaerobic exercise. Juice was given 30 minutes before 3 minutes of swimming as anaerobic exercise then continued by taking blood. The data of lactate acid production was examined by shapiro wilk examination and the differences on each lactate acid production in every group and was analysed by one way ANOVA and was proceeded with LSD examination.
Result: The average of lactate acid production on positive control group, negative control group, and three groups of juice giving treatment 1,8 g, 3,6 g, and 1,8 g, + 0,27 g of sugar /200 g body weight consecutively were 1,38 mMol/L, 7,14 mMol/L, 3,74 mMol/L, 1,66 mMol/L, and 2,91 mMol/L.
Conclusion: The dose of juice on treatment 2 (3,6 g/200 g body weight) was the most effective dose since it resulted the least lactate acid.

Keywords: Anaerobic, Lactate acid, Raja's banana, Sport drink, Yellow watermelon